

**AUTONOMOUS BATTERY CELL BALANCING SYSTEM WITH
INTEGRATED VOLTAGE MONITORING**

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ABSTRACT OF THE DISCLOSURE

[055] An autonomous lithium-ion cell balancing system with integrated voltage monitoring includes a lithium-ion battery having a plurality of cells, a cell balancing circuit and a cell balancing control circuit. The heart of the cell
10 balancing circuit is a plurality of gated cell balancing converters that are connected with the battery cells and a common share bus. Each gated lithium-ion cell balancing converter receives an input drive voltage and an input sample voltage and transfers energy from highly charged lithium-ion cells to the less charged lithium-ion cells, forcing all cells to have the same energy level.
15 Further, the gated cell balancing converter provides a telemetry output voltage analog to an input cell voltage, eliminating the need for a separate cell voltage monitor.